# Ludovic D Righetti

## List of Publications by Year
in descending order

| 98 papers | 3,848 citations | 394286<br>19 h-index | 265120<br>42 g-index |
|---|---|---|---|
| 100 all docs | 100 docs citations | 100 times ranked | 2458 citing authors |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 1 | Robust Walking Based on MPC With Viability Guarantees. IEEE Transactions on Robotics, 2022, 38, 2389-2404. | 7.3 | 7 |
| 2 | Millimeter Wave Wireless Assisted Robot Navigation With Link State Classification. IEEE Open Journal of the Communications Society, 2022, 3, 493-507. | 4.4 | 5 |
| 3 | Exponential integration for efficient and accurate multibody simulation with stiff viscoelastic contacts. Multibody System Dynamics, 2022, 54, 443-460. | 1.7 | 5 |
| 4 | Stagewise Newton Method for Dynamic Game Control With Imperfect State Observation. , 2022, 6, 3241-3246. | | 1 |
| 5 | On the use of simulation in robotics: Opportunities, challenges, and suggestions for moving forward. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, . | 3.3 | 55 |
| 6 | Meta Learning via Learned Loss. , 2021, , . | | 10 |
| 7 | Efficient Multicontact Pattern Generation With Sequential Convex Approximations of the Centroidal Dynamics. IEEE Transactions on Robotics, 2021, 37, 1661-1679. | 7.3 | 26 |
| 8 | Robot Learning With Crash Constraints. IEEE Robotics and Automation Letters, 2021, 6, 1439-1446. | 3.3 | 13 |
| 9 | Variable Horizon MPC With Swing Foot Dynamics for Bipedal Walking Control. IEEE Robotics and Automation Letters, 2021, 6, 2349-2356. | 3.3 | 16 |
| 10 | Impedance Optimization for Uncertain Contact Interactions Through Risk Sensitive Optimal Control. IEEE Robotics and Automation Letters, 2021, 6, 4766-4773. | 3.3 | 14 |
| 11 | Slow-fast Dynamics of Strongly Coupled Adaptive Frequency Oscillators. SIAM Journal on Applied Dynamical Systems, 2021, 20, 1985-2012. | 0.7 | 3 |
| 12 | High-Frequency Nonlinear Model Predictive Control of a Manipulator. , 2021, , . | | 19 |
| 13 | DeepQ Stepper: A framework for reactive dynamic walking on uneven terrain. , 2021, , . | | 4 |
| 14 | Leveraging Forward Model Prediction Error for Learning Control. , 2021, , . | | 1 |
| 15 | Learning a Centroidal Motion Planner for Legged Locomotion. , 2021, , . | | 6 |
| 16 | Reactive Balance Control for Legged Robots under Visco-Elastic Contacts. Applied Sciences (Switzerland), 2021, 11, 353. | 1.3 | 3 |
| 17 | Rapid Convex Optimization of Centroidal Dynamics using Block Coordinate Descent. , 2021, , . | | 5 |
| 18 | A unified framework for walking and running of bipedal robots. , 2021, , . | | 2 |

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| 19 | A Real-Robot Dataset for Assessing Transferability of Learned Dynamics Models. , 2020, , . | | 3 |
| 20 | Crocoddyl: An Efficient and Versatile Framework for Multi-Contact Optimal Control. , 2020, , . | | 127 |
| 21 | Learning Variable Impedance Control for Contact Sensitive Tasks. IEEE Robotics and Automation Letters, 2020, 5, 6129-6136. | 3.3 | 45 |
| 22 | Walking Control Based on Step Timing Adaptation. IEEE Transactions on Robotics, 2020, 36, 629-643. | 7.3 | 35 |
| 23 | Robust Humanoid Contact Planning With Learned Zero- and One-Step Capturability Prediction. IEEE Robotics and Automation Letters, 2020, 5, 2451-2458. | 3.3 | 8 |
| 24 | An Open Torque-Controlled Modular Robot Architecture for Legged Locomotion Research. IEEE Robotics and Automation Letters, 2020, 5, 3650-3657. | 3.3 | 115 |
| 25 | On the Effects of Measurement Uncertainty in Optimal Control of Contact Interactions. Springer Proceedings in Advanced Robotics, 2020, , 784-799. | 0.9 | 3 |
| 26 | Enabling Remote Whole-Body Control with 5G Edge Computing. , 2020, , . | | 5 |
| 27 | Whole-Body Manipulation. , 2020, , 1-9. | | 0 |
| 28 | Birch tar production does not prove Neanderthal behavioral complexity. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 17707-17711. | 3.3 | 53 |
| 29 | Efficient Humanoid Contact Planning using Learned Centroidal Dynamics Prediction. , 2019, , . | | 21 |
| 30 | A Robustness Analysis of Inverse Optimal Control of Bipedal Walking. IEEE Robotics and Automation Letters, 2019, 4, 4531-4538. | 3.3 | 6 |
| 31 | Unintended Consequences of Biased Robotic and Artificial Intelligence Systems [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2019, 26, 11-13. | 2.2 | 16 |
| 32 | Leveraging Contact Forces for Learning to Grasp. , 2019, , . | | 18 |
| 33 | Where Do We Go From Here? Debates on the Future of Robotics Research at ICRA 2019 [From the Field]. IEEE Robotics and Automation Magazine, 2019, 26, 7-10. | 2.2 | 1 |
| 34 | Epstein, Project Maven, and Some Reasons to Think About Where We Get Our Funding [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2019, 26, 8-13. | 2.2 | 2 |
| 35 | Robust Humanoid Locomotion Using Trajectory Optimization and Sample-Efficient Learning. , 2019, , . | | 10 |
| 36 | Learning to Explore in Motion and Interaction Tasks. , 2019, , . | | 0 |

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| 37 | Growing the Humanoid Robotics Community [TC Spotlight]. IEEE Robotics and Automation Magazine, 2019, 26, 136-137. | 2.2 | 1 |
| 38 | Lethal Autonomous Weapon Systems [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2018, 25, 123-126. | 2.2 | 3 |
| 39 | Learning Task-Specific Dynamics to Improve Whole-Body Control. , 2018, , . | | 3 |
| 40 | Learning a Structured Neural Network Policy for a Hopping Task. IEEE Robotics and Automation Letters, 2018, 3, 4092-4099. | 3.3 | 8 |
| 41 | An MPC Walking Framework with External Contact Forces. , 2018, , . | | 16 |
| 42 | Unsupervised Contact Learning for Humanoid Estimation and Control. , 2018, , . | | 15 |
| 43 | On Time Optimization of Centroidal Momentum Dynamics. , 2018, , . | | 28 |
| 44 | Robust Physicsâ€based Motion Retargeting with Realistic Body Shapes. Computer Graphics Forum, 2018, 37, 81-92. | 1.8 | 12 |
| 45 | The Impact of Robotics and Automation on Working Conditions and Employment [Ethical, Legal, and Societal Issues]. IEEE Robotics and Automation Magazine, 2018, 25, 126-128. | 2.2 | 41 |
| 46 | Momentum-Centered Control of Contact Interactions. Springer Tracts in Advanced Robotics, 2017, , 339-359. | 0.3 | 0 |
| 47 | Whole-Body Control [TC Spotlight]. IEEE Robotics and Automation Magazine, 2017, 24, 12-14. | 2.2 | 1 |
| 48 | Inertial sensor-based humanoid joint state estimation. , 2016, , . | | 20 |
| 49 | Stepping stabilization using a combination of DCM tracking and step adjustment. , 2016, , . | | 12 |
| 50 | Step timing adjustment: A step toward generating robust gaits. , 2016, , . | | 50 |
| 51 | Balancing and walking using full dynamics LQR control with contact constraints. , 2016, , . | | 27 |
| 52 | A convex model of humanoid momentum dynamics for multi-contact motion generation. , 2016, , . | | 59 |
| 53 | Structured contact force optimization for kino-dynamic motion generation. , 2016, , . | | 54 |
| 54 | Momentum control with hierarchical inverse dynamics on a torque-controlled humanoid. Autonomous Robots, 2016, 40, 473-491. | 3.2 | 169 |

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| 55 | Kinematic and Gait Similarities between Crawling Human Infants and Other Quadruped Mammals. Frontiers in Neurology, 2015, 6, 17. | 1.1 | 32 |
| 56 | Trajectory generation for multi-contact momentum control. , 2015, , . | | 67 |
| 57 | Humanoid momentum estimation using sensed contact wrenches. , 2015, , . | | 24 |
| 58 | Balancing experiments on a torque-controlled humanoid with hierarchical inverse dynamics. , 2014, , . | | 95 |
| 59 | Full dynamics LQR control of a humanoid robot: An experimental study on balancing and squatting. , 2014, , . | | 26 |
| 60 | State estimation for a humanoid robot. , 2014, , . | | 76 |
| 61 | Dual execution of optimized contact interaction trajectories. , 2014, , . | | 14 |
| 62 | Learning of grasp selection based on shape-templates. Autonomous Robots, 2014, 36, 51-65. | 3.2 | 80 |
| 63 | An autonomous manipulation system based on force control and optimization. Autonomous Robots, 2014, 36, 11-30. | 3.2 | 58 |
| 64 | Optimal distribution of contact forces with inverse-dynamics control. International Journal of Robotics Research, 2013, 32, 280-298. | 5.8 | 161 |
| 65 | Learning objective functions for manipulation. , 2013, , . | | 72 |
| 66 | Controlled Reduction With Unactuated Cyclic Variables: Application to 3D Bipedal Walking With Passive Yaw Rotation. IEEE Transactions on Automatic Control, 2013, 58, 2679-2685. | 3.6 | 21 |
| 67 | AGILITY - Dynamic full body locomotion and manipulation with autonomous legged robots. , 2013, , . | | 0 |
| 68 | Using Torque Redundancy to Optimize Contact Forces in Legged Robots. Lecture Notes in Electrical Engineering, 2013, , 35-51. | 0.3 | 1 |
| 69 | Learning task error models for manipulation. , 2013, , . | | 20 |
| 70 | Probabilistic depth image registration incorporating nonvisual information. , 2012, , . | | 1 |
| 71 | Template-based learning of grasp selection. , 2012, , . | | 65 |
| 72 | Towards Associative Skill Memories. , 2012, , . | | 71 |

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| 73 | Encoding of periodic and their transient motions by a single dynamic movement primitive. , 2012, , . | | 28 |
| 74 | Quadratic programming for inverse dynamics with optimal distribution of contact forces. , 2012, , . | | 30 |
| 75 | Inverse dynamics control of floating-base robots with external constraints: A unified view. , 2011, , . | | 91 |
| 76 | Control of legged robots with optimal distribution of contact forces. , 2011, , . | | 26 |
| 77 | Toward simple control for complex, autonomous robotic applications: combining discrete and rhythmic motor primitives. Autonomous Robots, 2011, 31, 155-181. | 3.2 | 51 |
| 78 | Learning motion primitive goals for robust manipulation. , 2011, , . | | 26 |
| 79 | Learning force control policies for compliant manipulation. , 2011, , . | | 106 |
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| 81 | INVERSE DYNAMICS WITH OPTIMAL DISTRIBUTION OF GROUND REACTION FORCES FOR LEGGED ROBOTS. , 2010, , . | | 5 |
| 82 | Constrained accelerations for controlled geometric reduction: Sagittal-plane decoupling for bipedal locomotion. , 2010, , . | | 3 |
| 83 | Adaptive Frequency Oscillators and Applications. Open Cybernetics and Systemics Journal, 2009, 3, 64-69. | 0.3 | 35 |
| 84 | Frequency analysis with coupled nonlinear oscillators. Physica D: Nonlinear Phenomena, 2008, 237, 1705-1718. | 1.3 | 49 |
| 85 | Pattern generators with sensory feedback for the control of quadruped locomotion. , 2008, , . | | 166 |
| 86 | Passive compliant quadruped robot using Central Pattern Generators for locomotion control. , 2008, , . | | 55 |
| 87 | A modular bio-inspired architecture for movement generation for the infant-like robot iCub. , 2008, , . | | 35 |
| 88 | A Dynamical System for Online Learning of Periodic Movements of Unknown Waveform and Frequency. , 2008, , . | | 3 |
| 89 | Experimental study of limit cycle and chaotic controllers for the locomotion of centipede robots. , 2008, , . | | 17 |
| 90 | iCub: the design and realization of an open humanoid platform for cognitive and neuroscience research. Advanced Robotics, 2007, 21, 1151-1175. | 1.1 | 234 |

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| 91 | Hand placement during quadruped locomotion in a humanoid robot: A dynamical system approach. , 2007, , . | | 11 |
| 92 | Movement generation using dynamical systems : a humanoid robot performing a drumming task. , 2006, , . | | 37 |
| 93 | Dynamic Hebbian learning in adaptive frequency oscillators. Physica D: Nonlinear Phenomena, 2006, 216, 269-281. | 1.3 | 273 |
| 94 | Engineering entrainment and adaptation in limit cycle systems. Biological Cybernetics, 2006, 95, 645-664. | 0.6 | 82 |
| 95 | Evolution of Fault-Tolerant Self-Replicating Structures. Lecture Notes in Computer Science, 2003, , 278-288. | 1.0 | 2 |
| 96 | Programmable central pattern generators: an application to biped locomotion control. , 0, , . | | 164 |
| 97 | Design methodologies for central pattern generators: an application to crawling humanoids. , 0, , . | | 39 |
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